

THIN FILM FORMATION AND DEVICE THEREOF

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Abstract

PURPOSE: To enable thin films in high quality containing the minimum impurity to be formed rapidly by a method wherein inert gas flow constantly running in a specified direction is laid between multiple material gas flows making a substrate to be deposited shift to epitaxially deposit an atomic layer.

CONSTITUTION: An inert gas constantly running in a specified direction is laid between multiple material gas flows constantly running in a specified direction in a reaction chamber 10 so that a substrate W to be deposited may be shifted alternately in the multiple material gas flows traversing the inert gas to epitaxially deposit an atomic layer. That is, the title device is composed of an exhaust system such as an orifice valve OF and a turbo molecular pump VP arranged on the pivot part 11 of a fan-shaped reaction chamber 1 as well as the leading-in ports Na, Nb, Nc of material gas and inert gas provided on the end 12 of the sector part making the gasses constantly run in the specified direction so that the substrate W may be positioned on the intermediate part to be shifted in the constantly running gasses. Through these procedures, the thin films shall not be subjected to any abnormal deposition enabling the crystalline thin films and polycrystalline thin films in high quality to be formed rapidly thus cutting down the manufacturing cost.